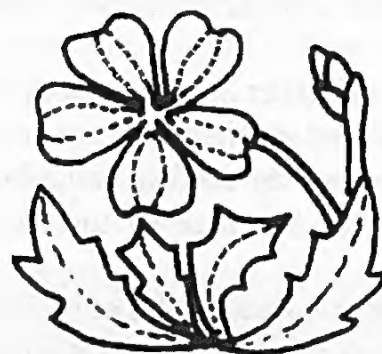


# Ballarat Naturalist



Trailing Goodenia  
*Goodenia lanata*  
(Club Logo)

## Impact of fire residues on water quality

Speaker: Dr Michael Angove, Latrobe University, Bendigo

Dr Michael Angove, accompanied by Evan Quill, from Latrobe University in Bendigo addressed the April 2005 club meeting on the impact of fire residues on water quality.

The alpine fires in January 2003 created a massive quantity of fire residue. These fires burnt 400,000 Ha, about the same area as the 1939 bush fires but were more intense. The run off from the burnt areas feeds a number of major dams including the Dartmouth Dam, the biggest in Victoria.

The fires affected a wide range of plant communities including alpine, sub alpine, blue gums, snow gums, grassland and peat bogs. The fires were so hot that even peat bogs which are inherently very wet were burnt. Some trees and peat bogs were still burning a week to 10 days after the fire started.

Latrobe University in Bendigo established a team of seven researchers who had a range of expertise including biologists and chemists to research the effect of the residues. They were interested in changes to soil structure and water quality. Burnt areas at Mt Buffalo and Falls Creek were visited a few days after the fires then 2 weeks, 3 months and 9 months later with about 160 mm of rain falling in the area in the first 3 months.

Slides showing recovery of the vegetation were shown. After two weeks at Mt Buffalo epicormic growth was visible on many trees whereas as at Falls Creek where there are snow gums which come back from tubers there will be a longer time until recovery. Three months after the fires there was a lot of bracken, and black berries have proliferated, particularly at Mt Buffalo.

Burning on the high plains was in sections. An interesting comment was that areas that were fenced off to prevent cattle grazing were not burnt with a photo showing an unburnt fenced area surrounded by a burnt area that had been grazed.

The ash layer in some places was 10 cm thick. The ash makes the soil hydrophobic so the increased nutrients are not carried into the soil. Also, the soil structure is weakened with roots near the surface being burnt. Photos of electron micrographs showed very small particles, less than 10 micrometres.

To investigate effects of residue getting into water supplies, samples were collected and soaked in water. A bottle with the resultant liquid was shown. This was black through dissolved material, not sediment so the coloured material was not going to settle out. The water contained humic acid. If this material is treated by chlorine as part of the normal water treatment process then a chemical is formed which has a structure something like DDT which is carcinogenic. Places like Mt Beauty had to shut off their water supplies for several weeks after the fire.

Not surprisingly, fires have major impact and it was interesting to hear of the less visible effects as well as seeing a comprehensive set of pictures of the areas being investigated.

Peter Dalman

***NB: Subscriptions for 2005 now due.***

***Please note the new rates as outlined in April Newsletter***

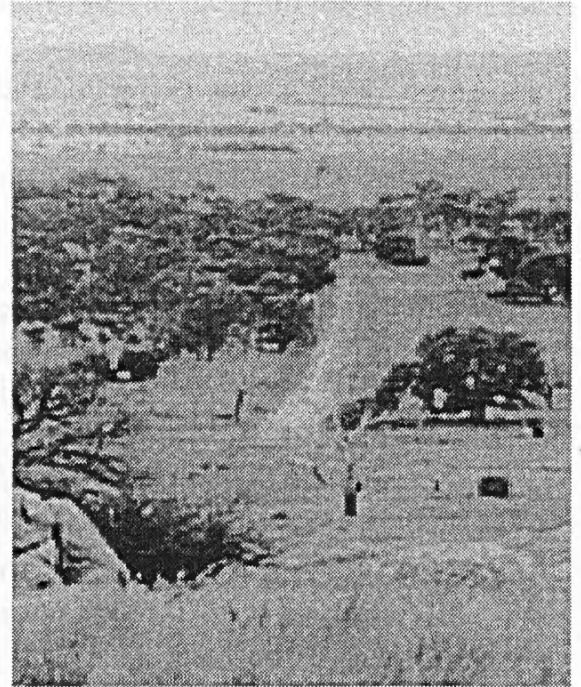
### **Excursion: Little River Earth Sanctuary – Sunday 3<sup>rd</sup> April 2005**

Some time ago Fran Hanrahan suggested we visit Little River Earth Sanctuary. She had previously been and was impressed. Twenty-one members and guests disregarded an unpleasant, wet, windy day and arrived at the sanctuary for a picnic evening meal before our walk. We were pleased to be able to eat in civilised fashion in the dining room of the homestead on the property, Mt Rothwell. The home, along with Werribee Mansion and Carranballac belonged to the Chirnside family. They owned Mt Rothwell from the 1870s until 2000 when it was purchased for the Earth Sanctuary.

Considering what it was like in Ballarat, the weather was astonishing – dry, still and mild. As the sun set and dusk arrived we enjoyed our high vantage point amongst granite outcrops seeing Port Phillip region, distant Melbourne, the close You Yangs, the Brisbane Ranges and the lovely homestead itself. Before we began our walk we enjoyed a close view of a Boobook owl in an old palm tree beside the verandah.



The Old Chirnside Homestead



Scene from the property

Our guide, Paul, joined us and we began our two kilometre night stroll, not quite sure what to expect. Standing at the feral proof fence we were reminded just how rare native grasslands now are with only 0.01% of the original cover remaining.

The fence itself is impressive. Enclosing and dividing 700 hectares, it was completed in 2002, is 22 km long and is designed to exclude feral animals. The top edge folds out and has a 5 – 7 KV electric wire around the edge. There is a similar horizontal section that extends about one foot at the bottom. The lower wire has smaller holes and is heavier gauge than the rest. The section on the ground is not buried as it has been discovered that this is satisfactory. The comment was made that so far rabbits haven't worked out that if they dug back a bit from the fence they could enter. The upper wire is not taught; in fact it is rather floppy. This is to deter cats which become alarmed if their grip is wobbly. The height of six feet meets Victorian legal requirements and consequently does not inhibit kangaroo movement. Paul said kangaroos bound over the fence as if it were not there. The fence is patrolled daily to ensure it has not been disturbed. The management is turning a blind eye to an old fox which roams outside and claims the territory. The idea is



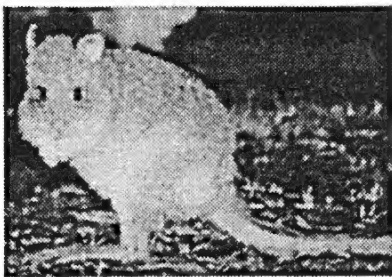
that if it were killed, younger, more vigorous foxes may succeed in entry. The fence is expensive at \$15,000 to \$20,000 per kilometre but appears to be effective.

Within this fence, after a stroll admiring the Brisbane Ranges we reached two large cages. Here Brush Tailed Phascogales (*Phascogale tapoatafa*) and Eastern Quolls (*Dasyurus viverrinus*) are being bred for release. Both of these are carnivores with the Phascogale able to take something its own size. Originally the Phascogale had a reputation as a poultry killer. Their tails were impressive, as long as the main body and feather-like. Elaine wants a couple scampering around her house as dusters.

The Eastern Quoll is now extinct on the mainland, surviving only in Tasmania. It eats insects and small mammals, but can be fed on pet mince and is completely domesticable. John Wamsley who established the sanctuary has said they should be the pet of the future. We had excellent views of these and were later pleased to see a released one living freely.

As darkness descended we were escorted into the next area, enclosed again by an internal feral animal proof fence. All feral animals and non-indigenous plants had been removed from this area. The scene that unfolded captured the image Australian early settlers would have viewed. Red Bellied Pademelons (*Thylogale billardierii*), Southern Brown Bandicoots (*Isodon obesulus*), Rufous Bettong (*Aepyprymnus rufescens*), Long-nosed Potoroos (*Potorous tridactylus*), Brush-tailed possums, Red necked Wallabies, and Eastern Grey Kangaroos scampered around in the half light and later in torch light. Also listed for the sanctuary but unseen were Eastern Barred Bandicoots.

The sanctuary personnel are justifiably proud of ridding this large area of weeds and pest animals and the consequent proliferation of native animals. We did not need to search for elusive animals; they were just everywhere, sometimes alone, sometimes in groups, often quite close to us. The track is easy and winds through some old growth trees, fallen timber and grasslands. Birds had settled for the night but the list is about 200. Les pointed out a flying owl and we saw some bats. Several times annually a count is conducted by pairs of people scattered through the property.

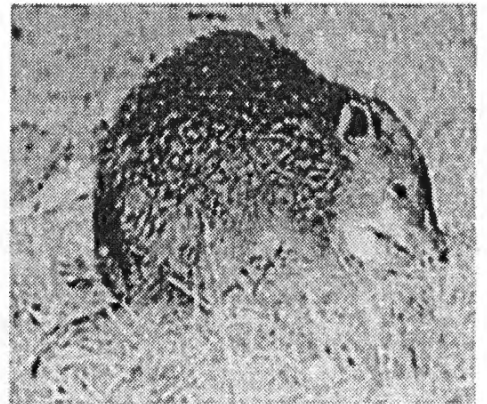


Rufous Bettongs

Rufous Bettongs, which had been extinct in Victoria for more than 100 years before release at Little River, bound like kangaroos with the word Bettong being aboriginal for small kangaroo. They eat fungi, tubers, roots and insects and can carry nesting material in their tails to build substantial nests of grasses amongst rocks and under logs.



Long-nosed Potoroos are about 36cm long and can be found in the Grampians and coastal Victorian areas. They hop in a distinctive 'pottering' motion and feed on underground fungi (58 species) but are omnivorous and also eat insects, fruit and plant material.



The Southern Brown Bandicoot has recently been added to the endangered list. They also feed on insects, seeds, fungi and plant material and have rear opening pouches that prevent dirt entering as they dig.

Red-bellied Pademelons, once common in Victoria particularly in coastal areas, are grazing animals feeding on grasses, seedlings and shrubs. Their biggest threat is predation by foxes and consequently they have thrived in Tasmania.

As we left the enclosure the guide said "Welcome to Europe" and it was certainly a reminder that we had experienced the environment quite differently and much more pleasurably than we have come to accept.

The Little River Earth Sanctuary conducts these evening tours every day with bookings necessary by telephoning . There are also other tours available including a tour of the Mt Rothwell homestead, a Ned Kelly film set tour and a self guided "Wallaby Rocks Trail".

Claire Dalman

## **FNC Ballarat Minutes of GENERAL MEETING 1st April 2005**

### **Meeting points**

The President welcomed 29 members & visitors.

### **General Business**

- Volunteers for Supper Roster and Lecture Scribe: Claire Dalman; Peter Dalman
- Volunteer to write up excursion report for the Newsletter .
- Syllabus: New fixture card available now. September excursion to be on Sat. 3rd to avoid Father's Day. Don't forget website, & details in Courier Community News.
- FNCV 125th Anniversary: Fran Hanrahan to attend.

### **Show and Tell**

- Helen Burgess: 50cm long eucalyptus leaf ? Blue Gum.
- Ken Hammond: raven's nest containing 3 wire coat-hangers, whipper-snipper plastic cord, clothesline wire.
- Carol Hall: photos from the SEANA campout in March 2005

### **Field Reports**

- Ken Hammond: >200 Red-capped Plovers on S shore of Lake Burrumbeet. Large numbers of Long-billed Corellas in Wendouree.
- Ken McDonnell: Honeyeaters feeding frequently on blooming *Leonotis* (exotic) in Creswick.
- Paul Norquay: at Mt. Egerton: small bats, up to 4 at a time, flying inside the house on several occasions; 3 scorpions inside the house
- John Tadgell: at Mt. Doran, 8 Eastern Swamp Hens visit my back door every morning for a small feed of grain (parrot mix)
- John Gregurke: at Lake Burrumbeet, a Little Eagle perched in dead Red Gum, harassed by Brown Falcon. Whistling Kite flying overhead; Black Falcon flew over lake and ducks and avocets took to the air. Very large numbers of Red-Necked Avocets and Banded Stilts in northern section.
- Les Hanrahan: White-striped Mastiff Bat, Lesser Long-eared Bat, Large Forest Bats seen with Matt Gibson when using harp trap.
- Anne Rowland: Wallaby in Nerrina backyard - regular visitor as the garden backs onto wetlands.

**Excursion arrangements:** Excursion to Little River Earth Sanctuary: Meet at entrance picnic area at 5 pm to eat tea. Tour starts 6 pm, cost \$22 per head. Bring sturdy footwear, torches, insect repellent, cameras.

**Syllabus Item:** Michael Angove "Fire Research". Michael was thanked by Fran Hanrahan.

### **Supper**

**Please note:** Syllabus 2005 – 2006 is now available.  
**NB:** A change of date - September excursion is not Sunday Sept. 4 but Saturday Sept. 3 because the Sunday is Father's Day

### **What's in a name?**

An article in the English magazine, "Country Life" caught my eye. It reported that Choughs, after disappearing from Cornwall a half a century ago, had reappeared in the county. This had delighted Cornish men as the Chough appears on the Cornish coat of arms. Until these five birds reappeared small numbers of the declining species had been restricted in the British Isles to sea cliffs on the west coast of Wales and a few islands off the coast and in Ireland.

In the article the point was made that the name chough is onomatopoeia (i.e. formed by an imitation of the sound associated with the thing designated) and should be pronounced 'chow' rather than 'chuff'.

The sound associated does not apply to our likeable White-winged Chough and it is obvious the naming of our species as Chough was derived from the appearance of the bird. The similarities with the Chough of Europe and S. W. Asia are the glossy-beaked corvid-like body and distinctive thinner, pointed and strongly down-curved bill.

However the Common Chough (but now rare!) of Europe has all black plumage and bright red bill and legs, and is of different genus viz. *Pyrrhocorax*. It frequents and nests on inaccessible cliffs and is noted for remarkable aerial acrobats- seemingly for the fun of it! There is also an alpine Chough with yellow bill and legs.

Our White-winged Chough, with its black bill and legs, and red eyes is a sociable bird of woodlands, a mud-nest builder and communal nester. It trades under the name of *Cocorax* (crow-like) *melanorhoamphus* (black bill).

Greg Binns

### ***Do you enjoy your supper?***

Thank you to all those who faithfully bring along a contribution to supper most meeting.

How about a few more contributors, please?



## Calendar

### May

- Fri. 6 Meeting: Matt Gibson - *Bats of the Ballarat area.*  
\*Sat. 7 Excursion: *Creswick Regional Forest.*  
May 28-29. 125th FNCV anniversary celebrations at Mueller Hall, Royal Botanic Gardens  
Tues 24 Committee Meeting at C. Hall's 7.30pm

### June

- Fri. 3 Meeting: Attila Kapitany – *Succulent plants of Australia*  
Sun. 5 Excursion: *Fungi*

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Supper duty:	May: Dalmans	June: Helen Burgess
Note-taker	May: volunteer please	June: volunteer please

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## Committee

**President** Mr. Peter Dalman  
**Vice-President** Mr. Greg Binns  
**Secretary** Mrs. Carol Hall  
**Treasurer** Mr. Les Hanrahan

Miss Helen Burgess.....  
Miss Maureen Christie.....  
Mrs. Claire Dalman.....  
Ms Fran Hanrahan (Editor)  
Mrs. Pat Murphy.....

**Correspondence:** PO. Box 328W, Ballarat West, 3350.

**Email:** Secretary:  
Editor:

**Website:** [www.ballarat.yourguide.com.au](http://www.ballarat.yourguide.com.au) Click on *Local Info. Search Environment.*

**Meetings** are held at the Ballarat Horticultural Centre, cnr. Gregory & Gillies Sts (VicRoads 254 F8) on the first Friday of the month at 7.30pm.

**Excursions:** Depart from Ballarat Market Place (formerly Creswick Plaza) Creswick Rd., Ballarat (VicRoads 255 M10) at 9.30 am unless otherwise specified.

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